Lesson 8

Truth or Consequences?
Effects of Marijuana Use

Rationale
Adolescents often overestimate the percentage of their peers who use marijuana and underestimate the negative effects of the drug’s use. Perception of harm is an important factor for mitigating risk. Normative education methods effectively correct misconceptions about behavior.

Objectives
Following this lesson, the student will be able to:
• Discuss the physical, mental, social, and emotional consequences of marijuana use
• Discuss the misperceptions of marijuana and its use
• Examine the effects of marijuana on the body, particularly on brain function
• Evaluate the impact of marijuana impairment on goals, activities, and occupations
• Discuss the psychological addiction aspects of marijuana use

Activities
1. Clearing the Air ........................................................................................................ 10 minutes
2. Fact Check ............................................................................................................... 15 minutes
3. Arrested Development ............................................................................................ 15 minutes
4. Rank ...................................................................................................................... 10 minutes

Materials
In this lesson, you will need:
• Student Workbook pages 18-19
• SPECT Scans of Brain Activity, Media Disc Segment 9 (in your kit)
• Fact Check Game Cards (in your kit)
• Game Pawns (in your kit)
• Occupation Cards, Teacher’s Manual pages 107-114
• Bring It Home Newsletter Issue 8, Teacher’s Manual Appendix
• Self-Adhesive Note Pads

Before You Start
• Distribute the Student Workbooks at the beginning of the lesson.
• Prepare the Media Disc, segment 9: SPECT Scans of Brain Activity images for display in Section 3: Arrested Development.
• For Section 1: Clearing the Air, draw the Tug-of-War image found on Teacher’s Manual page 103 on the board. Your illustration should be approximately 24-36 inches wide, allowing ample space for the students to place notes on either side or the middle of the drawing. Label the top of your illustration with “Topic:”.
• Review the Fact Check game materials, lesson script on Teacher’s Manual pages 98-99, and Game Instructions on Teacher’s Manual page 106.
• Make a copy of the Occupation Cards to be used in Section 4: Rank.
• Prepare Bring it Home 8 newsletter. Distribute at the end of the lesson.
Lesson 8: Truth or Consequences? - Effects of Marijuana Use

1. Clearing the Air

Last week we talked about the harmful effects of nicotine use. We also discussed the serious health risks presented by tobacco products, which are the primary sources of nicotine. What are some of the short-term and long-term effects of tobacco use? Wrinkles, lung cancer, yellow teeth, nicotine addiction, bad breath, heart disease, shortness of breath, emphysema, etc. Very good! What are some of the benefits of being tobacco free? Fresher breath, whiter teeth, healthier heart, healthier lungs, breathe better, smell better, etc. Excellent! Even though tobacco users can begin to experience these benefits after they quit, it is better to never start using in the first place.

Today, we will talk about a drug that is the subject of an ongoing debate about its legal status as well as its effects on the body.

Can anyone guess which drug I am talking about? Marijuana. That’s right; the ongoing discussion about marijuana makes it difficult to understand its true effects. We are going to take a look at the information about marijuana that perpetuates the arguments in this debate.

I’m going to put you into groups to discuss the reasons, messages, or other information you have heard that support each side of the debate: is marijuana safe or unsafe? You will have five minutes to discuss what you have heard about marijuana and whether or not it is safe for people to use. I will give each group a stack of note pads. Write down one fact, idea, or reason per note supporting either side of the argument. Then, select a representative from your group to place your notes on the board under their corresponding viewpoints. If you’re not sure which side to put the note on, place it in the middle of the tug-of-war. Allow time for students to complete the activity.

Review the students’ notes and read aloud the common ideas. This activity is designed to give students the opportunity to share the information they have heard about marijuana. It is not necessary to debate or teach about these ideas. The rest of the lesson will present the facts and risks associated with the use of this drug.

In our lesson today, we will discuss recreational marijuana use not medicinal marijuana use. You’ve heard a lot of information about marijuana. With all of the information out there it can be difficult to know if the information is consistent with scientific facts or just hearsay.

Where can we find reliable information about the effects of marijuana use? Encourage student response. A good example of a reliable source for drug information is the National Institute on Drug Abuse (NIDA). What are examples of unreliable sources? Movies, friends, users, dealers, some documentaries, etc. These sources are unreliable because they offer opinions or interpretations about marijuana that are often only assumptions or hearsay.

2. Fact Check

What you think you know about marijuana may or may not come from a reliable source. To evaluate your knowledge about marijuana we are going to play a game called “Fact Check.” Open your workbooks to page 18. This game will help you determine if your perception matches the scientific facts about the drug.

In a moment, I will put you in groups. Each group will receive game pawns, a deck of Answer Cards and a deck of Question Cards. Each group will use one player’s game board from their
workbook to play. The object of the game is to be the first person to reach the finish line by determining if the statements about marijuana are fact or fiction.

To set up the game, separate the Question Cards from the Answer Cards. Place the Question Cards face down on the table next to the game board. Deal each player one Fact Answer Card and one Fiction Answer Card. Place your game pawn on the start line on the game board. Select one player to be the first Announcer. Players will take turns being the Announcer in a clockwise fashion.

To play, the Announcer draws a Question Card and reads it aloud to the group. The other players must quickly decide if the answer is fact or fiction. Wait for the Announcer to finish reading the statement before answering. Answer by placing either your Fact Answer Card or Fiction Answer Card face down on the table. The Announcer will determine which player was the first to put their Answer Card down.

Once all of the Answer Cards are down, the first player to answer turns over his or her Answer Card. If the answer is correct, the player moves forward two spaces on the board. If the answer is incorrect, the player moves back one space. The Announcer will then ask the other players to turn their Answer Cards over. All of the players who answered correctly will move forward one space. Players who answered incorrectly will move back one space. Once the players have completed their moves, the Announcer reads the information at the bottom of the Question Card.

If the Announcer draws a Joint Effort Card, the Announcer selects one player to answer the question. If the player answers correctly, the Announcer and the player both move forward two spaces. If the player answers incorrectly, both players move back one space.

Divide the class into groups of 3-6 students and distribute a set of game materials to each group.

Allow time for students to play the game.

Collect the game materials.

3. Arrested Development
Did any of the answers in the game surprise you? Encourage student response. The questions, answers, and research supporting the answers in the game are located on pages 104-105 in this manual.

The game explored facts about marijuana and the effects its use can have on the body and brain. Does anyone recall, from the lesson on the effects of alcohol, when the brain stops developing? In the mid twenties. That’s right; the brain continues to develop until we are in our mid-twenties. Tetra-hydro-cannabinol or THC interferes with the healthy development of the brain. Let’s take a closer look at how the different areas of the brain are affected.

Display the SPECT Scans of Brain Activity, Media Disc Segment 9.

These scans illustrate brain activity like the scans we looked at in the alcohol lesson. These scans, however, show the underside of the brain. Refer to the image of the Healthy Brain. Who can tell which one is the active, healthy brain and which one is less active because of marijuana use? Refer to the image of the Brain Damaged by Marijuana Use. The presence of THC in the brain reduces or slows down communication between the cells. What can you tell me about the holes you see in the scan? They aren’t really holes. They are areas of the brain that have been damaged or aren’t working properly. That’s right; they’re not holes but actually brain cells that have been damaged or that have reduced activity.
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The THC in marijuana attaches to the cannabinoid receptors throughout the brain. It is this attachment that lets marijuana affect so many different functions of the body.

Look at the section in your workbook titled “Effects of THC on the Brain.” This diagram identifies the areas of the brain that have large numbers of cannabinoid receptors. The chart to the right of the diagram includes the areas of the brain; what each area of the brain regulates; and how the area is affected by THC. Review the chart carefully and use the information to answer the questions that follow. Allow time for students to complete the activity.

Let’s review your answers. Which specific areas of the brain are useful when you are preparing for the SAT? Hippocampus, Neocortex, Amygdala. How could marijuana use affect a person’s performance on the SAT? They might forget to go to the test; they might struggle to recall information; they might not be able to focus on the questions; they might not be motivated to prepare for the test; etc. What consequences could result from lower SAT scores? Losing a scholarship, not getting into the college of your choice, etc. The THC in marijuana impairs memory and learning by altering how information is processed in the hippocampus.

Which specific areas of the brain are necessary to safely drive a vehicle? Basal Ganglia, Cerebellum, Hippocampus, and Neocortex. How could marijuana use affect a person’s ability to drive a vehicle safely? They might get into a crash; they might run a stop sign; they might get a DUI; they might hurt themselves or someone else; they might not be able to focus on driving; etc. Who else could be affected if someone drives under the influence of marijuana? Family members, friends, stranger that might be involved in a car crash, police officers, etc. It’s easy to think the decision to use the drug only affects the user, but everyone the user encounters can be affected by their choice to use drugs.

How could marijuana use affect a person’s relationships with their friends or family? They might have fights with friends or family members; they might become paranoid that their friends are doing something mean to them; they might not trust family members anymore; family and friends might not trust the user anymore; etc. Marijuana use reduces or limits the motivation to go out and do things with friends and family. It can also weaken trust in relationships resulting in users disappointing or pulling away from family and ending relationships with friends who don’t use.

Think about how some of these negative effects can interfere with a person working to reach their goals. Look at the section in your workbook titled “Goal Post.” Write down a personal goal in the space provided. This goal can be one you have already completed or one you are working toward. Then, list two negative effects of marijuana use that could interfere with you reaching your goal. Allow time for students to complete the activity and share their answers.

4. Rank
Let’s look at how marijuana use could affect different occupations. I need eight volunteers to come to the front of the room. Select eight volunteers and give each an Occupation card. Line up the volunteers side by side in no particular order facing the class.

Each of these volunteers represents an occupation. Your task is to line up the occupations according to the impact marijuana use would have on their job performance. Place the occupation whose job performance would be most affected by marijuana use on the far left and the person whose job performance would be least affected on the far right.
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Allow several minutes for the students to direct the placement of the volunteers. Allow students to discuss the different occupations. Some students may say it is not possible to rank the effects of marijuana on these occupations.

Is it easy to rank the impact of marijuana use on these occupations? No. Why are you having such a difficult time reaching a consensus? Every occupation could be affected if the person used marijuana. Every one of these occupations could be affected if the person used marijuana. Which job skills do you think are most impaired by marijuana use?

Allow time for students to discuss the skills essential to the occupations and how marijuana use could impair these skills. The following points can be made in the discussion:

- **Surgeon**
  Surgeons depend on accurate depth perception and sensitive motor skills when performing surgeries. They also need to be able to react quickly if there is a problem.

- **Airline Pilot**
  Airline pilots are responsible for many people, not only the passengers, but also people on the ground. Pilots need good depth perception, reaction time, and concentration.

- **Auto Mechanic**
  Mechanics need focus and concentration when working on a vehicle. Forgetting to tighten a bolt or improperly repairing a system would leave the car unsafe to drive.

- **Construction Worker**
  Construction workers are responsible for everything from the heaviest earthmover to the smallest nail. They have to be able to focus on the smallest detail and not forget any step in the process.

- **Pharmacist**
  Pharmacists are responsible for filling the correct prescription for the correct person. An error in dosage or labeling could prove fatal.

- **Childcare Worker**
  Childcare workers are often responsible for many different children at one time. The ability to make split-second decisions and react on a moment’s notice keeps children out of harm’s way.

- **911 Dispatcher**
  Dispatchers must react quickly and with concern about the caller. They need to send help immediately, not whenever they feel like it.

- **Student**
  Being a student is an occupation. Marijuana use interferes with learning. If we don’t have students, we won’t have any of these other occupations.

Some of you may have peers who use marijuana. You may think it doesn’t negatively affect them. So far, their schoolwork, their social lives, and/or their athletic ability may not show any serious negative effects. Just because we can’t see something, doesn’t mean it isn’t happening. We know the earth is rotating, but we can’t feel it, and we certainly can’t see it.

At the beginning of the lesson, you listed thoughts and ideas about each side of the debate about the safety of using marijuana. Research consistently shows that recreational marijuana use is harmful to the developing teenage body and brain. It isn’t something safe to put into your body, and for this reason, it will remain illegal for teenagers to use regardless of the legal status of use for adults.

Next week we will talk about the harmful effects of street drug use and the misuse of prescription and over-the-counter drugs.

Collect Student Workbooks.

Collect Rank Activity Materials.
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Looking for More?
Supplemental Activities & Resources

Putting it in Writing
Write a paragraph about one of the following quotations:

“So many writers make dope glamorous; a form of romantic transgression, or world-weariness, or poetic sensitivity, or hipness. Mainly it’s the stuff of ritualistic communion among inarticulate bores.”
Leonard Michaels

“Look, just in the context of school, we know that marijuana negatively affects concentration, focus, memory and retention. Hello out there? Concentration, focus, memory, and retention. If you were in school, arguably, concentration, focus, memory, and retention are important things.”
Author Unknown

“In the long run, we shape our lives, and we shape ourselves. The process never ends until we die. And the choices we make are ultimately our own responsibility.”
Eleanor Roosevelt

Home Workout
Your family and friends may think they know a lot of information about marijuana, but is their information based on scientific facts or hearsay? Create a list of ten statements about marijuana, some of them true and some of them false. Then, challenge your family and friends to determine if the statements are true or false. Be sure you can back up your statements with scientific facts. A reliable resource for drug information is the National Institute on Drug Abuse.

Into Action
At the beginning of our lesson, we talked about the tug-of-war over perceptions of harm regarding marijuana use. Consider all the risks of marijuana use we covered in our lesson. Choose one area to research more extensively and write a brief persuasive essay about why one should choose not to use marijuana. Remember an effective persuasive essay considers the counterpoint—or what the opposition would argue—and then uses facts to support why the counterpoint is easily disputed. For example, you may choose to research the effects of marijuana use on the developing teen brain or the addictive nature of marijuana. The National Institute on Drug Abuse is a good resource for you to begin your research.

Around Town
Write a song or a poem raising awareness of the risks of using marijuana. As you write, keep in mind the facts you learned from our lesson, as well as research you gained on your own. You may wish to collaborate with a classmate. Arrange with the school staff a time when you can hold a small talent show. You might consider planning it during a lunch hour and setting up a stage area in the lunchroom. During this time, you will get the opportunity to read your poem or sing your song, showcase your talent, and inform the student body about the facts surrounding marijuana use.